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Nesting Habits of the Desert Sparrow Hawk Near Santa Monica, Cal.

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IN this locality the sycamore trees found in the mouths of the canyons leading back into the foothills have always been favorite nesting places for the Desert Sparrow Hawk (*Falco sparverius deserticola*.) These trees are many of them very large, and the numerous cavities and woodpeckers' excavations furnish ideal nesting sites for these birds. Although there are a good many oak trees among the sycamores the Sparrow Hawks do not nest in them, and during five years collecting in this locality I have not found a single set of their eggs in an oak tree.

There is one fact in regard to the nesting of these birds which I have never found any one able to explain. This is, why the birds never have to abandon a set of eggs on account of water during wet seasons. I have so often had the bird refuse to leave the nest that I always climb to it whether the bird is flushed or not. I have many times found a nest filled with water, and I always feel in the water for eggs but have never found any. These rains often occur right in the height of the nesting season, sometimes filling nests from which I had already taken one set of eggs. It seems strange that the birds do not get caught in some of the leaky nests once in a while, but this does not seem to be the case.

The nesting season here varies greatly, beginning as early as the 15th of March in some years and in others not until the middle of April. The duration seems to depend to a great extent upon how many times the birds are robbed, as they will lay several sets if they are not allowed to hatch the eggs.

This spring I started out with the intention of taking a series of Sparrow Hawks' eggs for Mr. G. Frean Morcom of Los Angeles. As usual I did all of my collecting near Santa Monica, with the single exception of one trip up the

beach to a canyon near Point Dumas, where I secured five sets of eggs. The remaining twenty-eight sets of this series all came from the same locality in which I have done most of my collecting, Santa Monica and vicinity.

In making this series I used especial care with reference to keeping the eggs from each nest separate from those taken from other nests, so that the several sets taken from one nest during the season would constitute a series of itself. My intention was to watch the nests closely and to take each set laid as soon as it was complete, in order to find out how long the birds would keep on laying; but I was unfortunately obliged to stop collecting the last of May and so could not complete the experiment. I took second and third sets from nests in several instances and in one case even got the fourth set. The intervals between the completion of the sets ranged from 20 to 26 days, with the exception of two, one of which was 29 days while the other was 40 days.

The following is a short record of a few of the nests from which I took sets this season. For the sake of convenience I refer to them as Nest No 1, No 2, etc.

Nest No. 1 is a woodpecker's excavation in the dead stump of a sycamore tree, and is about 15 feet above the ground. The mouth of the opening has been broken open until the hole is about five inches wide by fourteen deep. I took the first set of five fresh eggs from this nest on March 24, the parent bird watching proceedings from a neighboring tree. The second set of five eggs, also perfectly fresh, was taken April 18, the bird being flushed before the nest was reached. The third set, consisting of four slightly incubated eggs, was taken May 9. A fourth set of two eggs, also slightly incubated, was taken on the 29th of May. On these last two occasions the birds

would not leave the nest and had to be taken off before the eggs could be collected.

Nest No. 2 is a large natural cavity in the trunk of a live sycamore and is about twenty feet up. The cavity is about eighteen inches wide by three deep. The first set was taken from this nest on March 24, and consisted of five eggs, incubation far advanced. The second set of four eggs, incubation also advanced, was taken May 3, and, on the 25th of May, a third set of five slightly incubated eggs was taken from this nest.

Nest No. 3 is a natural cavity in the trunk of a live sycamore tree. This cavity is five inches wide by twelve deep, and is placed about 20 feet above the ground. The first set consisting of six fresh eggs, was taken from this nest on March 31, the bird being flushed. The second set of five eggs, slightly incubated, was taken on April 25. A third set consisting of five badly incubated eggs, was taken on the 25th of May. The parent bird was not on the nest on either of the two last visits.

Nest No. 4 is a woodpecker's excavation in the dead limb of a sycamore and is 30 feet up. The limb is about five inches through and the stub is hollowed out to a depth of six inches, leaving a mere shell of wood. Three sets were taken from this nest during the season; one of five eggs on April 7, one of five eggs on May 3 and the last, consisting of four eggs, on May 29th. The incubation in each of these three cases was slight.

By making a comparison of the eggs in this series, the similarity of the different sets from the same nest is seen to be very strongly marked in almost all cases. The resemblance is so strong that the sets from the same nest can be picked out from the others with but little difficulty. This goes to prove that the birds keep on using the same nest all through the season, unless it is destroyed in some way. In one case, in which I disturbed the nest while get-

ting the eggs, the birds simply moved about one hundred feet to another tree and there laid their second and third sets. These three sets are so different from any others which I have seen, that I am positive that they are from the same birds.

From observations taken during several years collecting in the same locality I am led to believe that the birds keep their nests from year to year, going back to the same nest they occupied the previous season. I have noticed a great deal of individuality in the actions of the birds while their nests are being robbed, the bird at any given nest always acting the same. Some of the birds will immediately fly away on being disturbed and not appear again. Some will perch in some near-by tree and scold. Others will hover in the air above their nest and scream at the intruder, while some will show fight and dart back and forth near the face of the person disturbing them. I have noticed that in the great majority of instances I have met with the same treatment at the same nests for several successive years. In three or four cases especially, this has been brought very strongly to my notice.

The sets this season averaged larger than for some years past. I collected two sets of six eggs each and found another so badly incubated that I was forced to leave it. The second and third sets were nearly all of five eggs each where usually they drop off to four and three eggs to a set. One set that was taken this year shows some features that merit a little fuller description. The set consists of five eggs and only two are at all similar. One of the eggs is fully a third larger than the others and is pure white. One has the large end completely covered with brown markings and one has the small end covered in the same manner. In addition to this, this last egg is considerably smaller than any of the others and is not nearly so pointed at the small end. The other two are rather lightly and evenly marked all over.